

REMARKS

Claims 7 to 24 are currently pending and being considered.

Reconsideration of the application is respectfully requested based on the following remarks.

With respect to paragraph 3 of the Final Office Action, claims 7 to 18 were rejected under 35 U.S.C. § 103(a) as anticipated by U.S. Patent No. 3,211,961 to Bayly et al. (the “Bayly” reference) in view of U.S. Patent No. 4,158,133 to Spaeth et al. (the “Spaeth” reference).

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Further, as clearly indicated by the Supreme Court in *KSR*, it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements” in the manner claimed. *See KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that “rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Independent claim 7, is to an infrared source for a gas sensor including the features of a first layer having first transmission characteristics produced by absorption of infrared radiation and a second layer having second transmission characteristics produced by absorption of infrared radiation, in which a combination of the first and the second transmission characteristics effects a bandpass filter characteristics for an operating frequency

range, and in which the first and second transmission characteristics are different transmission characteristics.

Independent claim 10 has features like those of claim 7.

The “Bayly” reference does not disclose at least the above-emphasized claim features. For example, the “Bayly” reference does not disclose the feature of an infrared source having *a first layer having a first transmission characteristic produced by absorption of infrared radiation* and a second layer *having a second transmission characteristic produced by absorption of infrared radiation*, in which the first and second transmission characteristics produced by absorption of infrared radiation are *different absorption characteristics*, as provided for in the context of the presently claimed subject matter.

Instead, the “Bayly” reference has an infrared source 10 in FIG. 7 that produces infrared radiation that passes through a sample cell 11 and then separately through each of four different Fabry-Perot interferometer filters 12, 13, 14, and 15. However, nothing in the reference discloses *two different layers having two different infrared radiation absorption characteristics*, as provided for in the context of the claimed subject matter. In this regard, the Final Office Action (and the prior Office Action) appears to rely upon the Fabry-Perot filters 12, 13, 14, 15 as being supposedly akin to the first and second layers of the infrared source of claim 7. However, these elements also do not disclose two different layers having two different infrared radiation absorption characteristics. Instead, because filters 12, 13, 14, 15 are Fabry-Perot filters, they are based on *interference and reflection phenomena*, as is generally the case with Fabry-Perot filters. Therefore, filters 12, 13, 14, 15 of the “Bayly” reference do not disclose two different layers having two different infrared radiation absorption characteristics, as provided for in the context of the claimed subject matter. The secondary “Spaeth” reference does not cure, and is not asserted to cure, this critical deficiency.

In the Response to Arguments section, it is conclusorily asserted that “the use of Fabry-Perot filters [is] capable of providing a band width of about .2μ to .3μ, where each filter includes two semi-transparent reflecting layers.” (Final Office Action, page 2). However, it is respectfully submitted that a mere mention a certain bandwidth in no way discloses absorption of infrared radiation let alone two different layers, as provided in the context of the claimed subject matter. As explained above, Fabry-Perot filters are based on interference and reflection phenomena. Nothing in the “Bayly” reference, whether taken

alone or in combination with the “Spaeth” reference, discloses the aforementioned claimed features.

Further, the sample cell 11 also does not disclose the feature of *two different layers having two different infrared radiation absorption characteristics*. This is because at best the sample cell has only a single absorption characteristic, not *two different absorption characteristics*.

The secondary “Spaeth” reference does not cure, and is not asserted to cure, this critical deficiency.

In the Response to Arguments section the Office conclusorily asserts that “one of ordinary skill would expect the two semi-transparent reflecting layers of Bayly to have different transmission characteristics, since there would be no advantage provided by both having the same transmission characteristic.” (Final Office Action, page 3, (emphasis added)).

It is respectfully submitted that this assertion offers no evidence, but only conclusory hindsight, reconstruction and speculation, which does not constitute evidence that will support a proper obviousness finding. In this regard, it is respectfully submitted that obviousness rejections without documentary evidence “should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration.” MPEP § 2144.03(A).

Nothing in the “Bayly” reference alone or in combination with the “Spaeth” reference discloses two different layers having *two different infrared radiation absorption characteristics*, as provided for in the context of the claimed subject matter. In fact, one skilled in the art would readily understand that an advantage of having two filters with identical characteristics is that it may offer a sharper roll-off frequency. In accordance with MPEP § 2144.03(C) and 37 CFR § 1.104(d) (2), it is respectfully submitted that an Examiner’s affidavit should be provided to support the obviousness rejections as to the assertions that “the two semi-transparent reflecting layers of Bayly [have] different transmission characteristic, since there would be no advantage provided by both having the same transmission characteristic.”

Further, the “Bayly” reference does not disclose the claim feature of an infrared source for a gas sensor having two different infrared radiation absorption characteristics. In this regard, the specification clearly describes in Fig. 9 that there are a first layer 102 and

second layer 103 at infrared source 10. (See Specification, Fig. 9). In stark contrast, the filtration of the “Bayly” reference is not at the infrared source but at the detector 19. (See, the “Bayly” reference, Fig. 2). The secondary “Spaeth” reference does not cure, and is not asserted to cure, this critical deficiency. In fact, the “Spaeth” reference discusses that it provides “filters consisting of one or more layers which are directly applied to the *detector* surface.” (The “Spaeth” reference, column 1, lines 51 to 53, (emphasis added)). Thus, filtration on an infrared source is not provided.

Accordingly, the combination of the “Bayly” reference and the “Spaeth” reference does not disclose the claim feature of an infrared source for a gas sensor having two different infrared radiation absorption characteristics as provided in the context of the claimed subject matter.

Still further, the infrared source 10 of the “Bayly” reference states that it only includes a resistive spiral 122 and a quartz window 124. However, the “Bayly” reference does not disclose that the quartz window 124 has a transmission characteristic produced by absorption of infrared radiation. Instead, it seems likely that the “Bayly” reference has selected the quartz window 124 so that it does not absorb infrared radiation. The Final Office Action acknowledges that “Bayly fails to teach layers having transmission characteristics produced by absorption of infrared radiation” but relies on the “Spaeth” reference to cure this critical deficiency. (See, Final Office Action, page 5).

However, to reject a claim as obvious under 35 U.S.C. § 103, the prior art must disclose or suggest each claim feature and it must also provide a motivation or suggestion for combining the features in the manner contemplated by the claim. (See Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931, 934 (Fed. Cir. 1990), cert. denied, 111 S. Ct. 296 (1990); In re Bond, 910 F.2d 831, 834 (Fed. Cir. 1990)). Thus, the “problem confronted by the inventor must be considered in determining whether it would have been obvious to combine the references in order to solve the problem,” Diversitech Corp. v. Century Steps, Inc., 850 F.2d 675, 679 (Fed. Cir. 1998).

In this regard, the Final Office Action has provided no proper motivation for combining the features of the “Bayly” reference with those of the “Spaeth” reference. Instead, it has only conclusorily asserted that “it would have been obvious to one of ordinary skill in the art at the time the invention was made that Bayly would use the aluminum filter layers of Spaeth to produce thin film filters which transmit a relatively narrow band of optical

radiation.” (Final Office Action, page 5). The Final Office Action has not established any finding as to why one skilled in the relevant art would be motivated to combine the teachings of “Bayly” with the teachings of “Spaeth” and whether one of ordinary skill in the art could have pursued the recognized potential solution with a reasonable expectation of success.

A *prima facie* obviousness cannot be established based on a modification of a reference that destroys the intent, purpose, or function of the invention disclosed in the reference, since there is no suggestion or motivation to make the proposed modification. See *In re Gordon*, 733 F.2d 900, 221 U.S.P.Q. 1125 (Fed. Cir. 1984). The Final Office Action asserts that applying the teachings of the “Spaeth” reference to those of the “Bayly” reference would provide “filters which have maximum radiation permeability for the operating range for the photo-detector.” However, it is the goal of the “Bayly” reference to reduce (**not enhance**) the permeability to the photo detector because the “resonances which are most useful occur in the infra-red region.” (The “Bayly” reference, column 2, lines 17 to 19.) Accordingly, one skilled in the art would not be motivated to combine the references as suggested by the Final Office Action.

As further regards the obviousness rejections, it is respectfully submitted that the cases of *In re Fine*, *supra*, and *In re Jones*, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Final Office Action's generalized assertions that it would have been obvious to modify or combine the references do not properly support a § 103 rejection. It is respectfully submitted that those cases make plain that the Final Office Action reflects a subjective “obvious to try” standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of *In re Fine* stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of In re Jones stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to make the modifications . . . necessary to arrive at the claimed [invention].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

It is believed and respectfully submitted that the present Final Office Action offers no evidence, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the references to provide the claimed subject matter.

The Federal Circuit in the case of In re Kotzab has also made plain that even if a claim concerns a “technologically simple concept” — which is not the case here — there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one

with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Here again, there have been no such findings to establish that the features discussed above of the rejected claims are met by the reference relied upon. As referred to above, any review of the reference, whether taken alone or combined, makes plain that it simply does not describe the features discussed above of the rejected claims.

Furthermore, even if the references would be combined as suggested by the Final Office Action, it is respectfully submitted that the combined teachings of the “Bayly” reference and the “Spaeth” reference clearly teach away from the claimed subject matter. For example, claim 7 recites, in relevant part an infrared source [including] a first layer having first transmission characteristics produced by absorption of infrared radiation and a second layer having second transmission characteristics produced by absorption of infrared radiation. In this regard, the specification provides that “the radiation emitted by the infrared source is emitted only in the range of the operating frequency range, and thus the dissipating of energy in other regions of the gas sensor will also be reduced.” Thereby, it is possible that the main heat development is only in the infrared source.” (Specification, page 2, lines 1 to 9, (emphasis added)). Accordingly, the features of the claimed subject matter, as clearly explained by the specification, include several benefits. In stark contrast, it is an object of the “Spaeth” reference “to provide filters for photo-detectors”. (The “Spaeth” reference, column 1, lines 45 to 50, (emphasis added)).

It is respectfully submitted that a photo-detector is not a source but a receiver. Hence, if the references would be combined as suggested by the Final Office Action, they would not enable the features and the benefits as provided in the claimed subject matter and the specification. For this additional reason, the combination of the “Bayly” and the “Spaeth” references does not disclose nor even suggest all the features of the claimed subject matter.

In view of the foregoing claims 7 and 10 and their respective dependent claims are allowable. It is therefore respectfully requested that the obviousness rejections be withdrawn.

Furthermore, in making a final rejection, any grounds of rejection “must . . . be clearly developed to such an extent that applicant may readily judge the advisability of an appeal unless a single previous Office action contains a complete statement supporting the rejection[, in which case] the final rejection may refer to such a statement and also should include a rebuttal of any arguments raised in the applicant’s reply.” *M.P.E.P.* § 706.07(a).

In the Amendment, dated November 13, 2008, Applicants presented new claims 19 to 24 reciting further features, which are plainly not disclosed by the applied references. The Final Office Action does not address these claims and arguments. Indeed, the Final Office Action does not at all address these features except to assert that “[r]egarding the newly added claims 19-22, the combination of Bayly and Spaeth discloses all the limitations therein” and has completely ignored claims 23 and 24. (See Final Office Action, page 6, paragraph 10.)

Therefore, the Final Office Action does not address all of the arguments “presented by the applicant which are still relevant to any references being applied,” and includes grounds of rejection which are not “clearly developed to such an extent that applicant may readily judge the advisability of an appeal.” The conditions of § 706.07(a) of the MPEP have not been satisfied. Accordingly, for that reason alone, as well as the Office’s policy of compact prosecution, the finality of the final Office Action should be withdrawn. Applicants further request that the next Office communication address all of the arguments and claims presented by Applicants.

CONCLUSION

Applicants respectfully submit that all pending claims of the present application are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn. Prompt reconsideration and allowance of the present application are therefore respectfully requested.

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Respectfully submitted,

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